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Developing an intersectionally-informed, multi-sited, critical policy ethnography to examine power and procedural justice in multiscalar energy and climate change decisionmaking processes

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ABSTRACT

Historically, energy and climate research have failed to fully integrate research from the social sciences. This is problematic as the development of energy systems and the rapid acceleration of climate change are directly tied to human activity. When the social sciences are incorporated in energy and climate research, their scope is frequently economically oriented. Methodological approaches remain frequently quantitative in nature. While important, these approaches cannot fully capture the nuances of power, inequality, and justice within decisionmaking processes that create and constitute our energy systems and subsequent climate change impacts and outcomes. As energy decisions and policies continue to increasingly shape the extent to which the world is impacted by climate change, we must think precisely about the complexity of identity and ***who*** is involved in energy decisions; who benefits from, and who is burdened by particular sets of energy decisions and the impacts of climate change. In addition, we must examine how these burdens and benefits manifest differently based on individual and group identities. To ignore these questions creates a research field where social actors and organizations remain decoupled from their role and responsibilities in the construction of and participation in these energy systems; where the embeddedness of a system is taken for granted, remains unscrutinized and unchallenged, and acts as a path-dependent barrier to the envisioning and building of an alternative energy future. In order to strengthen energy and climate change research and policy we must engage in research methods that can better account for underlying issues of power and justice within the decisionmaking processes across multiple socio-political scales. More specifically in this paper, I argue that using qualitative methodological tools rooted in intersectional feminist theory, such as a multi-sited critical policy ehtnography, are a crucial way to do so.

1. Introduction

As pointed out by Goodman and Marshall in the call for this special issue, the main causes of anthropogenic climate change "have to do with the production, politics, organization and technology of energy." Furthermore, concern about energy systems goes beyond technology and economics, entailing "political power, social cohesion, and even ethical or moral concerns over equity, due process, and justice" ([1], p. 16). Vanderheiden [2] notes that "Effectively addressing the problem of anthropogenic climate change…requires a commitment to fairness" (p. xii). He suggests that anthropogenic climate change is inherently an issue of global injustice, as its onset has been driven by global elites while its effects are and will continue to impact the world's poorest and most vulnerable populations. As an issue of global injustice then, approaches to addressing anthropogenic climate change must incorporate justice "as a central aim of global climate policy efforts" ([2], p. xiv). In their argument for equity as a fundameintal component of climate change policy research, Klinsky et al. [110] note that "without including equity in the analysis of policy decisions, the actual implications of trade-offs for diverse individuals and groups cannot even be identified" (p. 172). Given that historical and contemporary reliance on fossil fuels are a critical driver of anthropogenic climate change, energy, too, is inherently an issue of global injustice. Justice considerations, however, are still largely absent in energy decisionmaking processes which have implications for climate change and its subsequent impacts (Sovacool and Dworkin [112]).

Yet questions of climate and energy injustice are not relevant only on a global scale. Energy and climate change research must also account for the multiscalar impacts of energy decisions, or, how energy decisions impact spatially categorized groups of people in a society

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(Moore [88], Soja [89], Williamson [90]) (i.e. globally, regionally, nationally, locally, communally, and the body itself). In the past, energy and climate justice research has not always been connected across socio-political scales, understood as the different levels at which we see policy decisions made within a society. The bulk of climate justice literature discusses global-scale issues of distributive equity and rights-based approaches to justice [3]. Concerns center around ecologically unequal exchange, ecological debt, and the burden of responsibility for contributing to and combating climate change (see [4–11]). This is changing, however. The climate justice literature has begun to acknowledge the importance of multi-scalar considerations in their analyses (see [12–16]), as has energy justice literature [17,18]. There remains a need to further develop and incorporate issues of scale into justice research [3,19] as "few studies attempt to grasp how environmental justice (EJ) struggles function at multiple scales, from the cellular and bodily level to the global level and back" ([19], p. 4, see also [20,21]). This remains particularly absent in energy and climate research focused on procedural justice, that is, research which examines spaces for meaningful participation in energy and climate decision-making, processes. Studying decisionmaking processes is critical as it is through these processes that energy and climate policy outcomes are informed and established (for exceptions see [17,22,23]).

Taken together, the above suggests a need for social scientists to further develop theoretical and methodological approaches to studying energy and climate change that can better account for the nuances of power, equality, and justice, and their underlying influence on the decisionmaking processes which constitute our energy systems and climate change policies across multiple socio-political scales. Yet the question remains. How, exactly, might social science research do this? I suggest that developing intersectionally-informed methods such as a multi-sited critical policy analysis, is one way to strengthen these gaps in the energy and climate justice literature.

In a review of 15 years' worth of energy research, Sovacool [18] found that social sciences remain underutilized. When social science research is incorporated, it is primarily from economics, primarily authored by men from Western countries, and primarily done via quantitative methodologies [18]. This means that we are getting a limited understanding of the social aspects of our energy system and its consequences—they are (by and large) coming from a homogenous set of privileged perspectives utilizing a narrow subset of methodologies. Similarly, climate adaptation research has been considered mostly a field devoted to technical expertise, where large scale climate modeling and aggregate statistics are relied upon for the advancement of knowledge [23–25]. As a result of the lack of nuanced and diverse social science studies, the underlying social factors and the way energy actors and organizations reproduce the energy system status quo (which further contributes to climate change) are often overlooked and taken for granted. In order to get at the nuances of power and justice in the social processes and decisionmaking that constitute our energy system and its impacts on climate change, we need to incorporate new and diverse social science theory and research methods produced by a diverse set of social scientists. The burgeoning literature on energy and climate justice has been an important start (see, for example [1,92,94,95,87,91,97,98]). Developing qualitative methodological tools rooted in intersectional feminist theory is a critical way we can build on this effort.

The term 'intersectionality' was first used by Kimberlé Crenshaw, though, importantly, literatures advancing the necessity of accounting for multiple systems of discrimination pre-date this work [26] (for a review see Collins and Bilge [48]). In her earliest applications, Crenshaw used it to describe how the identities of black women, who are marginalized both because they are 'black' and because they are 'women' render them "invisible in plain sight" [27]. Her use of the concept is rooted in critical legal studies and black feminism, and, challenges the way we tend to methodologically work within the context of social categories, particularly in terms of statistical qualifications of how membership in one or more distinct categories have direct effects on particular dependent variables. While intersectionality has begun to be applied to environmental contexts (see [28–32]), an exploration of the methodological value of intersectionality to areas of environmental research—such as energy systems and climate change—is largely absent.

Qualitative methodological tools, such as multi-sited ethnographies, life-story narratives, analyses of everyday life as points of departure, participatory action research and policy analysis have been adapted by researchers conducting intersectional studies in other fields (i.e. health), and are valuable for advancing more equitable policies (see [28,33–38]). As intersectional methods center systems and structures of power, oppression, and domination, extending the application of intersectional-based methods is useful for cutting through multi-scalar issues in energy and climate change in a way that accounts for energy development and climate change as contextual processes influenced by power [39]. Across multiple socio-political scales, intersectional methods are effective for evaluating how identity and shared group identity within specific contexts create legacies of privilege and oppression for individual and institutional actors within energy development, energy use, and climate change; particularly in terms of their relative access to and influence over decisionmaking processes, as well as the distribution of risks and benefits associated with energy development and climate change.

Concerns about equity, fairness, justice, and power have gained attention in energy and climate research in the last three decades (see, for example, [1,17,31,32,99,100,108]). Despite the important void in the literature that this research is filling, parsing through issues of equity, fairness, justice, and power in the context of energy and climate change research presents important challenges. As such, it is imperative to situate the discussion of developing an intersectional methodology in the context of the challenges and barriers researchers face in applying this approach to studying energy and climate change.

As an early career sociologist, I have spent the last five years studying city, county, and state decisionmaking processes for developing regulations for unconventional oil and gas (UOG) development in Colorado along the Niobrara-DJ Basin. My focus has been on determining the extent to which individual and organizational actors are able to meaningfully participate in the decisionmaking process, what is commonly referred to as procedural justice (see [40,41]). This, of course, is a very particular subset of energy and climate change research, but it has presented research challenges that apply more broadly to the study of energy and climate change. Over the course of the last five years, I have run into multiple barriers to conducting social science research on justice in the context of energy and climate change. Two of particular importance for this discussion are: (1) a lack of access to the most and least powerful stakeholders and, (2) a lack of tools for analyzing the underlying ties between energy decisionmakers, the decisionmaking processes, and climate change across multiple socio-political scales. Together, these issues present challenges to accurately depicting the role of power and issues of injustice in energy and climate change decisionmaking processes. However, utilizing an intersectionally-informed, multi-sited critical policy analysis can help to address these issues.

An intersectional approach to studying procedural justice in energy and climate decisionmaking processes can work to break down the barriers mentioned above by challenging the taken for granted assumptions and actions that maintain the dominance of the fossil fuel industry in our energy policy status quo,[1] and by highlighting how the intersections of identity impact who has a meaningful voice in the decisionmaking process. Here, I review the concept of intersectionality as a theory and a methodological approach, discussing its value as a tool

[1] To understand the dominant influence of the oil industry over policy and politics, see, for example [42].

for advancing energy and climate change research that can uncover more nuanced, situated issues of power and justice in decisionmaking processes. Following this discussion I draw on my current methodological approach to studying procedural justice in oil and gas decisionmaking processes to demonstrate the value of intersectionally-informed, multi-sited qualitative research methods for developing a more nuanced, multiscalar approach to energy and climate justice research. In closing, I suggest that an expanded use of additional intersectionally-informed, multi-sited methodological tools would be useful for future researchers to enhance the study of power, justice, and equity in multiscalar energy and climate change contexts.

2. Enhancing research on energy and climate change decisionmaking processes: an intersectional approach to procedural justice

As stated above, intersectionality is a term coined by legal scholar and black feminist theorist Crenshaw [26,43].[2] The concept highlights the complexities that surround intersecting identity-based oppression. Specifically, Crenshaw [26] demonstrates how black women face both sexist and racist oppression in a social system dominated by white men. Scholars have continued to utilize this concept to demonstrate the extent to which black women and their interests are marginalized differently than black men who experience systemic oppression via racism, and white women who experience systemic oppression through sexism (i.e. see [26,46–50]). Crenshaw notes that this theory is more broadly applicable as oppressive systems move beyond race and gender and include other systems which are rooted in identity-based discrimination. This includes oppression rooted in ethnicity, age, nationality, disability, geographic location, legal status, and other aspects of collective identity. The intersections of these oppressive systems manifest as social justice issues which often then become issues ofenvironmental inequity (see [51,93,101).

Intersectionality has begun to be developed in socio-environmental studies, such as feminist political ecology [102,103], sustainability [52], resource extraction [30], climate change [29,53], environmental risk [54], pollution [21], urban ecology [55], and disasters [52,56–59]. Other authors have engaged in approaches that account for the intersections of identity categories in environmental studies without explicitly engaging the term intersectionality. This includes research on disasters [60,61], environmental activism [62] and EJ [63]. While intersectional approaches to energy and climate justice research remain largely absent (exceptions include [29,53,104]), literature within the broader field of EJ is increasingly examining the intersections of multiply-privileged and multiply-burdened actors in the relationships between people, society, and the environment. The growing field of critical EJ demonstrates the engagement of authors in research that examines power, inequality, and injustice, and the systems that have and continue to disadvantage some at the expense of others (see [19,40,64–67,105]). This includes issues of justice in both energy [68,111] and climate change contexts ([69,104]), where Whyte [70], interrogates the relationship between EJ, colonialism and the Dakota Access Pipeline. Yet many approaches continue to treat identity-based categories separately, that is, related, yet distinct. An intersectional analysis recognizes these identity-based categories as intertwined, overlapping, and inseparable from one another.

Recently, Malin and Ryder [22] proposed a deeply intersectional approach to EJ, which "explicitly recognize and iteratively analyze the contextual/historical, often mutually reinforcing, inseparable, and multiply oppressive structures that intersect to control and dominate marginalized individuals and communities while simultaneously privileging powerful actors" (p. 4). Lesquesne further develops the concept of intersectionality in the context of the climate justice movement, suggesting that the movement at Standing Rock, North Dakota, went beyond simply a building of alliances within an indigenous environmental movement, but the formation of a 'matrix of resistance' to pursue collective liberation and to counter the pro-Dakota Access Pipeline (DAPL) forces that constitute a 'matrix of domination' (Collins [106], for more on coalition building see May 2015). This approach is useful for thinking about multiple configurations of domination, oppression, and resistance across social groups, such as power differentials between fossil fuel activists and fossil fuel industry operators.

In addition, intersectionality pushes researchers to think about within-group differences in sets of privilege and disadvantage, such as within the subsets of activist organizations and industry actors regularly pitted against each other in energy decisionmaking processes. As such, one way an intersectional approach to justice issues advances this literature is by challenging the notion that certain stakeholder groups, (or individuals within) them) are homogenous in terms of power, privilege, influence, and advantage (or lack thereof). It challenges EJ research to take on the study of environmental burdens and benefits as they are situated in complex configurations of intersecting sets of identity-based privileges and oppressions which are contextual, fluid, intertwined, and inseparable from one another. In doing so, an intersectional approach creates a more nuanced understanding of how power and inequality operate to establish and maintain environmental, energy, and climate injustices. A subset of these areas of research where this is particularly important is the study of procedural justice.

But what is procedural justice, and how do we study it? Broadly, EJ scholars speak about procedural equity as the ability for actors to have meaningful participation in decisionmaking processes which will affect them [22,40,71]. Holland [23] describes procedural justice in the context of climate change and capabilities, that is, it is having the political power to shape decisions in the policy process. A capabilities approach put forth by Schlosberg [40,41] incorporates recognition as an important component of procedural justice. In the energy justice literature, Jenkins et al. [17] describe procedural justice as concerning "access to decisionmaking processes" governing distributions, which "manifests as a call for equitable procedures that engage all stakeholders in a non-discriminatory way" (p. 178). A second approach to flushing out procedural justice in energy research is undertaken by Sovacool et al. [1]. The authors' understanding of procedural justice aligns with what is outlined above, noting that procedural justice theories concern themselves with fairness in the decisionmaking process. In addition, they focus on transparency in the decisionmaking process as well as "the adequacy of legal protections, and the legitimacy and inclusivity of institutions involved in decision-making" (p. 5). This approach places power as a central concern of procedural justice, in addition to recognition and participation [1]. Critical questions in analyzing procedural energy and climate justice, put forth by Sovacool et al. [1] include: "Who gets to decide and set rules and laws, and which parties and interests are recognized in decision-making? By what process do they make such decisions? How impartial or fair are the institutions, instruments, and objectives involved?" (p. 5).

These are questions that are not exclusive to procedural justice research in energy and climate change decisionmaking processes. In their work on social construction and policy design, Ingram et al. [72] ask several critical questions about the process of policy development, including taking issue with the fact that while we are all technically equal in the eyes of the law, policy designs tend to primarily benefit the same groups of people while generally punishing others. They note that policy designs "affect participation through rules of participation, messages conveyed to individuals, resources such as money and time, and actual experiences with policy…Messages convey who belongs, whose interests are important, what kind of "game" politics is, and whether one has a place at the table." (p. 100). Yet while social

[2] Again, it should be noted that intersectional thought, or, the study of intersecting identity-based oppression predates the instructive works of Crenshaw where she first develops this concept (for a review see Clark et al. [96], Collins and Bilge [48], Durce [44], Jampel [45]).

constructionist approaches question power within the policymaking process, the achievement of procedural justice goes beyond simply having a seat at the table. Participation in this case must be meaningful. Additionally, Ingram et al. [72] discuss individuals' participation in the policy process as they are grouped based on one sole aspect of their identity, such as being a veteran or being an environmentalist. In reality, we recognize that these identities can and do overlap—creating a particular set of privileges and disadvantages for a homeless veteran participating in a policymaking process. This is the value of intersectionally-based procedural justice research.

Intersectional qualitative research methods are fruitful for examining these nuanced questions of power, process, and participation. Applying an intersectional approach to studying procedural justice in the context of unconventional oil and gas regulations has unveiled that not all industry operators can equally influence the decisionmaking process—nor are they equally impacted by the outcomes. For example, one Colorado lawmaker I interviewed suggested that within the group of industry operators working in the state, small operators are often at the whim of the desire of larger companies. So, if a larger company believes they can absorb the cost of a regulation or fine, they may support the institution of that regulation or fine. In fact, it may work in their benefit to do so:

> *Sort of the big industry members, like Noble, are all about pushing out the smaller folks. So when the methane capture regulations came out from the governor a lot of the big boys went 'Hm, okay, we can do it, we can afford it, and also it's going to force these other guys out of it which means they'll have to sell and we can take it from them.' And you know I have some sympathy for that…Environmental regulations have come full circle because the more stringent you make it, the more likely it is that the only people who can operate in that world are like the Exxons and the Nobles, as opposed to some neighborhood mom and pop group that's out there…So it's, same thing with fines, when you increase fines. Industry to a certain extent was like 'Okay we can absorb a million dollars.' Except for the smaller mom and pops where their entire operating budget might be a million dollars.*

As such, while small scale industry operators exist in a more privileged position for influencing regulatory decisions relative to other actors such as activists, their positionality relative to larger-scale companies operating with bigger profit margins suggests that they have less influence on the process, and that ultimately the benefits and burdens of regulatory decisions related to oil and gas development are not distributed evenly within the group of industry operators.[3] Furthermore, this reveals that an unintended consequence of oil and gas regulation in this case could be the further concentration of wealth and power into the hands of fewer fossil fuel companies—a troubling outcome for those concerned with equity and justice in the context of energy and climate change.

Conversely, even within groups that are predominantly marginalized, there is a recognition that some individuals have privilege that intersects with the way they are disadvantaged in the energy decisionmaking process. For example, I interviewed a bi-lingual Latina activist who has had little success in influencing how a wellpad site near her child's school. Despite the lack of procedural justice she has experienced in this decisionmaking process, she is quick to recognize how her privilege as a U.S. citizen means that she is able to speak up about these issues without the risk of deportation. She also acknowledges that she has the privilege of moving her child from the school if she deems it necessary:

> *If that site gets built, I can guarantee you that I am going to move my child to a different school. That again you know we'll bring up the concern about you know I have the luxury where I can move my kid somewhere else…And, you know, I have his dad involved. You know his dad's the one that does drop off and pick up from school. You know, so we have that flexibility where we can move into a different school, but, you know my sister that has kids that go to the school, she can't move them. You know? That's the closest school to their house, they can walk to school. She works in Denver. So it's like what is my sister going to do? You know, what are all the other parents going to do that don't have a car that don't have a job that allows them that flexibility to take their kids to school. That's why I say I have the luxury to move my kids to another school. A lot of people don't.*

In this case, the intersections of ethnicity, language, transportation and work flexibility meant that while her experiences in the oil and gas decisionmaking process were ones where she was largely dismissed by both local and state officials, she recognizes that the fact that she is even able to attend meetings, voice her opinion, and potentially move her child away from a potential environmental risk if necessary are all a result of sets of privileges she wields. Understanding these configurations of advantage and disadvantage are a unqiue contribution that intersectionally-focused research can contribute to strengthening energy and climate change justice.

Intersectionality acknowledges interlocking structures of oppression renders analyses focused on a single-category axis insufficient for understanding power, inequality, and the way that people who are oppressed by these interlocking structures are multiply burdened. As such, the experiences of those who are oppressed based on multiple aspects of their identity end up remaining absent from discourse, theory, and study [26,46,49]. It also leaves their needs frequently unconsidered and unmet in the policy world, in this case in terms of decisions about regulating oil and gas development.

The concern here is that in the context of energy and climate issues, those with the least amount of influence over the decisionmaking process are, intersectionally oppressed in such a way that they —cannot or will not opt in. In my research in one Northern Colorado community, for example, historical local conditions (i.e. SWIFT raids, the 2013 Colorado floods), and contemporary national conditions (immigration policy under the Trump administration) have created a situation where we infrequently hear the voices of Latinos in the oil and gas decisionmaking process. Documentation status and language capabilities also intersect with ethnic identity, so that those who are non-English speaking and/or undocumented are even less likely to have the ability to speak out about issues positively or negatively impacting their families and communities, even ones that might disproportionately benefit or burden them and their family [73]. Further complicating this issue is that the oil and gas industry employs many people from the Latino community in this region, so financially-dependent families may be further prevented from expressing concerns over regulation of the industry. These intersections of oppression are elaborated on by one study participant who was discussing the development of a large oil and gas wellpad sited near a low income Latino school in her neighborhood, the same proposed development mentioned above:

> *For the school population, you've got families who might be U.S. citizens but they also have lots of network within their family. So they may have even one person who is not a documented immigrant and they are extremely afraid of ICE [Immigration and Customs Enforcement] and ICE is active here. So they're not going to speak up, even if they have a distant relative that's trying to make it into the country. They have some family tie, that's saying, well I don't want to put my family in danger…Another thing is that they're working class and they really are trying to support families and they often don't speak English. So oil and gas is an employer. And, oil and gas tells them very clearly, they will not have work if they speak up. I mean it's very clear. You will not have work if you speak up. And again, you've got the network. There was a guy, he even spoke at the very first meeting. But he ended up renting a house to somebody who worked for oil and gas and he will not do anything he will not sign and he*

[3] It is important to point out, however, that I would refrain from suggesting that because small business owners in the oil and gas industry may lack some privilege this does not mean that they constitute a historically oppressed group.

will not speak up because he could lose his renter…The other populations here are Somalian refugees, most of them are legal immigrants because they were brought over through churches. And they just came from a war torn country and camps, where they have seen real tragedy and they don't even have a clue that this [oil and gas development] is bad, in comparison to where they were. And they don't speak English either. So, they don't know, and they are not going to be rebels…And a lot of the kids that are here, it's a really high trauma school, way high trauma. So let's add a little more. Most of the kids that are at this school are free to reduced lunch…most of them are people of color. So they are just not in position politically, we would like them to speak up, but they just won't.

In the case of this development project, age, ethnicity, nationality, legal status, language, class, and direct or indirect dependence on the oil and gas industry are all factors that are important for understanding who experiences benefits and risks related to oil and gas development, and how these benefits and risks manifest in peoples' lives.

As demonstrated above, energy and climate research would benefit from an intersectional lens that can expand analyses of power to include interlocking systems of oppression and inequality across multiple socio-political scales. By focusing on the entrenched power dynamics within our existing energy systems, the relationship between these systems, and climate change, issues of justice become a central tie through which a discussion of one must encompass them all. Without the application of an intersectional analysis, the full extent of environmental risk, oppression, and vulnerability that accompany energy decisions is masked. Furthermore, intersectionallyprivileged populations and the ways they benefit from the socio-environmental status quo remain obscure [31,32]. Intersectional inquiry can enhance our understanding of how being situated across multiple social locations creates differential experiences of environmental privileges injustices in energy and climate contexts, particularly in energy and climate decisionmaking processes. But what does an intersectional inquiry in these contexts look like, methodologically speaking?

3. Developing an intersectional qualitative methodology

Given how oppressive structures interlock, it is not accurate to describe the impact of multiple oppressions simply as a sum of multiple structures [26]. Quantitative analyses alone are methodologically insufficient for understanding power, oppression, and justice. From an intersectional perspective, power operates across multiple axes, is relational, locational, contextual, and structurally embedded [74]. Mechanisms of power vary, (i.e. economic resources, property claims, time, access to policymakers, establishing shared meaning making) and qualitative intersectional methods can unpack the differential levels of power that actors have in energy and climate change decisions.

Qualitative methodology aligns with interpretivst, social constructivist, critical, and poststructuralist research paradigms, and provides the ability to delve in-depth into complexities and processes [75,76]. As a qualitative analytical tool, intersectionality focuses on capturing and engaging what Cho et al. ([39], p. 788) refer to as the "contextual dynamics of power." Gender studies have developed qualitative intersectional methodologies such as life-story narratives and analyses of everyday life as points of departure for advancing intersectional understanding (see [74]). More recently methodological advancements of intersectionality have been developing in medical research and nursing journals [33,34,36,37]. These authors have engaged in document analysis, semi-structured interviews, and have even developed an intersectionality-based policy analysis framework with eight guiding principles and critical questions for that can help challenge health inequities (see [35]).

While there remains little application of intersectional methods in energy and climate research, Kaijser [28] utilizes intersectionally-informed qualitative methods to discuss the interwovenness of identity-based oppression in environmental conflict. In her study of environmental struggles in Bolivia, Kaijser [28] relies on multi-site ethnographies, semi-structured interviews, and participant observations to develop figurations, which "allows the analysis to center on particular, situated and embodied characters that act as nodes for relations of power in a specific context" (p. 32). In my own research on procedural justice in oil and gas regulatory and decisionmaking processes, I have been engaged in a multi-sited critical policy ethnography. Within this ethnography I have developed an adapted version of Hankivsky's intersectionality-based policy analysis framework which I utilize as a semi-structured interview guide.[4] I turn now to a discussion of this application of intersectional methodology, and its value for addressing gaps and barriers in energy and climate research.

3.1. Conducting an intersectionally-informed, multi-sited, critical policy ethnography on procedural justice in energy decisionmaking processes – addressing the problem of scale

3.1.1. Accounting for multiple scales in energy and climate justice research

As mentioned initially, one methodological barrier in the context of studying energy and climate justice issues is that the research is often focused exclusive on energy *or* climate issues, and with a focus on a single scale. Yet barriers to participation in energy and climate decisionmaking processes are interrelated and exist across multiple socio-political scales and manifest differently depending on geographic, historical cultural, political, and energy contexts. This brings up important methodological questions, such as: How exactly can we account for issues of power and justice as they are situated within and impacted by social relations and energy processes across multiple socio-political scales? What, if any methodological tools are flexible enough to be effective for studying energy and climate issues across these scales? Below, I elaborate on problems of scale in energy and climate research and discuss how an intersectionally-informed, multi-sited critical policy ethnography is valuable for developing more robust research on issues of power, privilege, and justice within energy and climate decisionmaking processes across multiple scales.

Thinking about the multiscalar nature of energy and climate decisionmaking processes reveals the complexity of developing a robust understanding of power, privilege, and disadvantage when it comes to issues of procedural justice. As a general example, we can think about debates around just action for climate change. Divisions about how to mitigate impacts of climate change often arise between nations in the Global North that are historical emitters and nations in the Global South whose carbon footprint is much smaller ([6,7,95,107,108]). The dominant approach put forth by political elites from the Global North is ahistorical, it emphasizes an equity in carbon reduction across nations, and they usually wins out over proposals put forth by the Global South's political elite that account for historical emissions and rely on a narrative of equitable opportunity for development. As noted by Pickering et al. [77] this came to a particular head in 2011 climate talks when the 'Durban Platform' filed to mention the word 'equity.' This was done at the behest of wealthy nations who feared the notion of equity had become too closely aligned with the way it was being conceptualized by leaders in the Global South [77].

If, however, we think about these global decisionmakers relative to other actors and organizations within the nations they are representing, the platforms put forth by these elite actors from both the Global North and the Global South accept the global energy system status quo as it is situated in the global capitalist growth system, which emphasizes rights to develop, or in some cases, a right to emissions (see [7]). Other actors with less privilege and power very clearly challenge these systems, including citizens from across both the Global North and the Global South. For example, protesters outside the various Conference of the Parties (COP) meetings on climate change demonstrate how non-

[4] For a copy of this interview guide, see Appendix A.

political elites and organizations challenging the energy status quo are by-and-large prevented from having a seat at the table. Yet even these protestors have some level of resource and privilege to have the capacity to travel the distance required to protest a moving global conference.

Across nations, individuals facing oppression based on intersecting components of their identity—class, gender, race, ethnicity, sexuality, age, and ability—are in some cases excluded from energy and climate decisionmaking processes. For example, this could occur as a result of restrictions placed on who is considered eligible to run for office, or when idividuals or groups lack resources to be able to voice their opinion about policy decisions that may directly impact them. In particular, the voices of non-political elites and multiply-marginalized groups in the Global South are missing from discussions of energy and fossil fuel decisions that will impact climate change, the burden of impact which they will bear disproportionately.

Across varying scale, we must be able to evaluate how identity and shared group identity within specific contexts create sets of conditions of privilege and oppression for actors and institutional actors within energy development, energy use, and climate change; particularly in terms of their relative access to and influence over the decisionmaking process, as well as the distribution of risks and benefits associated with energy development and climate change. With a focus on power structures, systems, and hierarchies, an intersctionally-informed, multi-sited policy ethnography can act as a tool for examining issues of energy and climate justice across multiple socio-political scales.

3.1.2. Applying an intersectionally-informed, multi-sited, critical policy ethnography to address the question of scale

The focus of my research is on understanding the extent to which procedural justice is being achieved in policy processes where decisions are made about regulations for oil and gas development at the city, county, and state level in Colorado. Furthermore, I work to contextualize this analysis as it is situated between both smaller (i.e. neighborhoods and the body) and larger (i.e. national and global) socio-political scales. In order to study this, I engage in a multi-sited, critical policy ethnography which consists of a combination of semistructured interviews, participant observation, policy analysis, and analysis of audio/visual materials (i.e. recorded public meetings).

A multi-sited ethnography "moves out from the single sites and local situations of conventional ethnographic research designs to examine the circulation of cultural meanings, objects, and identities in diffuse time-space" ([78], p. 79). It is useful for studying global processes and critically examining issues of interconnectedness across socially constructed scales [28]. Multi-sited ethnographers recognize that designating a geographically bounded field in a world where global connectivity is constantly expanding is challenging [28]. As Kaijser [28] notes from her research, "processes in a certain context cannot be separated from processes across a wider range of space and time; scales co-emerge in continuous interaction and interdependency" (p. 49). Furthermore, this approach highlights how scale is socially constructed in research to make distinctions between, for example, the local and the global, when in fact, scales are more interconnected than we paint them to be when we construct these categories (see [28,109]).

A multi-sited ethnography challenges traditional understandings of a research site or field, as well as the categories of scale constructed across a range of micro-macro settings [28]. It does so by employing methods that trace various people and their divergent perspectives and experiences across different geographic and social contexts [28]. These methods can include qualitative interviews, observations, and document analysis. Multi-sited ethnographies are an excellent tool for energy and climate change research given that by their nature they are issues that cut across geographic lines, have differential impacts across a variety of particular locales, and are multiscalar. The siting of an oil or gas well, for example provides one concrete location. Yet the potential impacts from this concrete location can pass socially constructed territorial boundaries, both vertically and horizontally. In my research, citizens in at least three Northern Colorado cities have expressed concerned about the proximity of proposed oil and gas development sites to their homes. But while their houses fall within the city limits, the nearby proposed drilling areas are actually on county land. This creates a difficulty in pinpointing a particular site or socio-political scale of focus for this research, which becomes further complicated by the way activists in these communities are challenging oil and gas development both within and outside of their community and across multiple governance scales. Other examples of cross-boundary, multi-sited spatial issues relate to unconventional oil and gas development include split estate situations [112] and forced pooling. We can take an even broader scope to understand this issue as multi-sited and multi-scalar. First, the extraction process is only one phase of energy development, and to trace the entire production-consumption chain of the resource is to span across space, time, and scale. Furthermore, the implications of the oil or gas well itself span across multiple socially-constructed scales, from concerns about localized social and environmental impacts to contributions to global emissions. Given that energy and climate change issues are multi-sited, multi-scalar processes isolating a particular place, project, or scale of importance in energy and climate issues is not only difficult, it provides an incomplete picture.

A particular type of multi-sited ethnography useful for unpacking power, privilege, and oppression in the context of energy and climate change is a critical policy ethnography, which focuses on analyzing these issues in the context of decisionmaking processes. A policy ethnography is "a form of extended, multisited ethnography" that incorporates organizational and policy analysis alongside ethnographic observations and interviews, and "operates with a policy goal in mind" ([79], p. 107). Policy ethnographies "provide useful qualitative data that give a nuanced and realistic ground-level view of policies too often analyzed abstractly from the top" ([80], p. 221). They focus on studying policy "processes and practices" in order to develop a more comprehensive understanding of them [81]. A critical policy ethnography pays particular attention to the process of policy construction, analyzing unequal power relationships as policies are mobilized by policy agents [81], and identifying how policies impact people who have internalized them. In so doing, a critical policy ethnography examines the "social and symbolic domination exerted throughout the policy process" [81].

For example, Colorado Governor John Hickenlooper established the Oil and Gas Task Force in to develop regulations on unconventional oil and gas development. The task force consisted of a variety of stakeholders representing the interests of the industry, environmentalists, local governments, civic organizations and agriculture.. The application process to become a member of this task force was an open one. Once members were selected, the task force traveled around the state to multiple different meeting sites, and in the end the task force passed a very small percentage of regulations that were proposed. Yet it was through intersectionally-framed questions to participants that I was able to uncover interesting inequities in terms of task force selection and decisionmaking—while anyone could apply, some individuals were invited and appointed specifically at the request of the Governor. In addition, initially for a proposed regulation to pass it required 50% of the vote. This was later changed to 2/3 of a vote, which made it difficult for regulations to pass without industry support. Many interviewees expressed disdain for a process they believed to unjustly favor the oil and gas industry in Colorado. Without this type of critical process analysis, many of these nuances of power and injustice within the decisionmaking process would remain buried.

The task force is only one example of the oil and gas decisionmaking process in Colorado. Activists, environmentalists, and concerned citizens are attempting to influence decisionmaking processes by placing their bodies strategically in peaceful protest, by voting in local and state elections, by introducing local initiatives that ban or more stringently regulate oil and gas development, by petitioning for state ballot initiatives, and by filing lawsuits against the state. Industry operators too

are operating across multiple sites and scales, investing money in city, county, and state elections, investing money to keep local and state regulations from advancing, and by suing individuals and cities which challenge their legal rights to access the resource. To date, the state regulatory body has yet to turn down one drilling permit—suggesting that the oil and gas industry operators continue to wield more influence over the decisionmaking process across multiples sites and scales in Colorado. The relationships across these processes could not be fully uncovered without the undertaking of a power-focused multi-sited, multi-scalar methodological approach to policy research.

Adopting a more flexible approach to site and scale can present its own methodological challenges. Where do we draw the lines to form the scope of a research project? How do we refrain from incorporating so many sites and scales that we lose our focus? How do we avoid focusing so narrowly that we gloss over situating our research in the proper historical, geographical, social, cultural, and political contexts? This can be a difficult balance to achieve. However, utilizing flexible boundaries as developed in work on strategic action fields is a useful approach for thinking about developing multi-sited and multi-scalar research, as this approach accounts for nested fields within and outside of a defined scope of research (for example, see [31,32]).

An intersectionally-informed, multi-sited critical policy ethnography, then, allows for a more nuanced and relational approach to understanding the "production, politics, organization and technology" of energy decisions, the role of power, privilege, oppression and access to participate in energy decisionmaking processes, and the subsequent socio-environmental consequences, both localized (i.e. air quality) and diffuse (climate change) across multiple socio-political scales. Furthermore, it allows for a more expansive scope in the study of energy and climate issues that account for the influence of relevant events, actors and processes across time, space, and scale, which influence energy and climate outcomes.

3.2. Adapting an intersectionality-based policy analysis for energy and climate research (IBPA) – addressing nuanced issues of power, privilege, and justice

3.2.1. Accounting for nuanced power and justice in energy and climate decisionmaking processes

A second methodological challenge in energy and climate change research is determining the appropriate tools for studying power, privilege, and justice as situated, nuanced, fluid, and historically and geographically contextual. Asking questions geared at understanding domination and oppression and how it may manifest differently across intersections of identity, get at the critical question of ***"who?"*** Who makes energy and climate decisions? Who has the power to create and maintain the status quo for energy and climate change decisionmaking processes? Who benefits? Who is burdened? Below, I elaborate on the importance of accounting for intersectionality when studying power, privilege, justice, and oppression in energy and climate decisionmaking processes. Further, I discuss how an IBPA is valuable for developing a fuller understanding of these issues.

Intersectionality illuminates the way that seemingly unrelated systems of domination are connected through shared logic patterns [49]. Spade [82] identifies how structures in government and society create unequal life opportunities for certain groups or kinds of people who experience intersectional oppressions, and calls for the all-out dismantling of these regimes. Spade's attentiveness to policy and politics suggests that an intersectional lens is an appropriate approach for studying power and justice in energy and climate change processes, highlighting the relationships between powerful fossil fuel regimes and elected officials and the way this shapes the policymaking process. This relationship is captured well by Lequesne's extension of the term petro-hegemony, which he describes as encompassing the "discursive, economic, and political strategies fossil fuel companies leverage to shape and maintain favorable relations of consent, compliance, and coercion to advance their interests" (2019, p. not yet avail.). It was also commonly identified by participants in my own research. For example, one Colorado lawmaker discussed the influence of oil and gas money in elections, as well as their ability to continually be lobbying politicians. The participant recalls a particular time where the state legislature was voting on increasing the number of inspectors the state employed to monitor oil and gas wells:

> *I'm pretty sure we have more oil and gas lobbyists in the lobby right now than we have oil and gas inspectors in the state of Colorado…if you've been to the Capitol, there is literally a lobby in front of the House floor. Lobbyists are not allowed on the House floor, and the same thing with the Senate. And so they just stand there and wait for us to come out…So that's the level of influence that they can buy. It's not just political ads. It's influence changers who are hired by the industry to be a constant presence there.*

Here and elsewhere, the influence of industry on the decisionmaking process relative to other stakeholders is clear. Yet it does not always take the same form, nor is it always happening at the same place or scale. That is, the industry has time and money, which can be exerted anywhere from local-level elections to state-level bills, and beyond. An intersectional approach enhances justice research focused on the social processes that constitute energy systems and anthropogenic climate change, and is useful in identifying what constitutes petro-hegemony and the power exerted in establishing and maintaining it. Of equal importance is its use for uncovering whose voices are less powerful, as well as whose we may not heard at all in energy and climate decisionmaking processes.

3.2.2. Utilizing an IBPA to examined nuanced issues of power and justice

As part of an intersectionally-informed, multi-sited, critical policy ethnography of energy and climate decisionmaking processes, I engaged in semi-structure interviews. While intersectionality is a guiding approach for my research methods as a whole, it is particularly important for the semi-structured interview guide, which I have developed by adapting the IBPA proposed by Hankivsky et al. [35]. They developed this intersectional framework to explore inequities within women's health issues that are rooted in 'racism, colonialism, ethnocentrism, heterosexism, and able-bodism" ([35], p. 1). They also aimed to utilize the methodological tool to "produce knowledge that captures how systems of discrimination or subordination overlap and 'articulate' with one another" ([34], p. 1). The IBPA framework consists of guiding principles and twelve critical questions informed by those principles. The twelve questions are broken down into descriptive and transformative categories—the former aimed at uncovering a holistic understanding of the context of policy 'problems,' and the process through which these are "identified, constructed, and address[ed]" (p. 3), and the latter as an exercise for developing "alternative policy responses and solutions specifically aimed at social and structural change that reduce inequities and promote social justice" ([35], p. 3–4).

As Hankivsky et al. [35] note, this IBPA framework is intended to be simple, flexible, and adaptable to be relevant for different policy contexts. As such, I adapted their IBPA to be relevant for studying procedural justice in energy decisionmaking processes (see Appendix A). This allows me to ask participants about the spaces in the decisionmaking processes that are open and available to them in terms of city, county, and state processes. I am also able to ask questions to gain insight into the extent to which they believe their participation in the regulatory policy development process is meaningful, whether all participants have an equitable ability to influence the decisionmaking process, how they would like to see the process changed, and who is missing entirely from the process, among other things.

Applying these types of inquiries to energy and climate change policy processes can uncover the way policymakers frame what constitutes a 'problem' in energy and climate change policy, how power plays a role in the framing that is used to identify these problems, and

who has the power to influence how policymakers frame the issues. Like social constructionist approaches to policy processes, what becomes labeled and defined as a 'problem' is a political exercise within which power and influence matter a great deal [72,83]. For example, not every policymaker I have interviewed considers climate change a legitimate 'problem.' If enough powerful people dismiss climate change as a policy problem, policies to address the issue of climate change, and, as such, policies to regulate fossil fuel emissions, will not move forward. Furthermore, if enough powerful people dismiss research on energy, climate change, and justice entirely, it can be difficult for a researcher to access and interview a sufficient amount of key stakeholders to move their study forward.

In previous sections I have described in some detail how the use of the IBPA has revealed relevant intersecting identities that impact the extent to which individuals are able to have meaningful participation in and influence over decisionmaking processes for oil and gas regulations in Colorado. This was achievable via the IBPA as the questions on my interview guide ask directly about different knowledge sets of participants, their role in the decisionmaking process, what stakeholders have been involved in decisionmaking processes, which ones have been absent, and how the benefits and burdens of oil and gas development are distributed across involved or impacted actors and organizations. This helped to identify the most and least powerful actors and organizations in decisionmaking processes. However, this did not necessarily translate into access to these actors or organizations. The barriers that keep multiply-marginalized individuals from participating in the policy process to regulate oil and gas development also work to frequently keep them from being willing or able to participate in academic studies. But at the other end of the spectrum, the most powerful and influential individuals working in the fossil fuel industry have little incentive to opt in to these same studies. As such, while conducting this research a difficult challenge has been the recognition that the individuals who have agreed to participate are in many ways—across race, gender, class, and relative power over the decisionmaking process—more homogenous than not. They generally represent a range of individuals who, while they do not wield the power tof industry operators, are also not completely powerless. Though even within this group of participants I have and will continue to draw out intersectional differences (i.e. differential activist capacities, strategies and alliances), it is important to recognize that this is only a small portion of the spectrum when discussing issues of procedural justice in energy decisionmaking processes. Yet, the triangulation of intersectionally-informed methods is helpful for at least partially counteracting this. Industry operators regularly attend and address lawmakers at public meetings that are often recorded. As such, participant observation and audio/visual analysis can provide some insight into intersectionally-privileged actors and organizations in the decisionmaking process.

Despite these difficulties, intersectional approaches that highlight power in policy processes can lead to new knowledge and insights enhancing the potential for challenging the status quo" in the energy and climate change policy realm. By incorporating these type of questions into the energy and climate policy development and evaluation process, researchers can better identify those who are being excluded—intentionally or unintentionally—from the policymaking process, with the hope of making the process more inclusive.

4. Developing an intersectional methodological toolkit for future energy and climate research

Sovacool [18] suggests a need for energy researchers to further explore "concepts from the disciplines of gender studies, philosophy and ethics, communication studies, geography, social psychology, cultural anthropology, development studies, governance, and the sociology/history of technology, as well as topics such as energy justice, identity, persuasion, scale, behavior, innovation, externalities, and subsidies (among others)" (p. 2). That is, energy scholars must engage in energy and climate change research by, as Goodman and Marshall suggest, acknowledging that energy decisions and systems are comprised of socio-political processes, which, Sovacool [18] points out, often historically have largely benefitted some actors at the expense of others. Here, I have touched on several of these areas of expansion—utilizing an identity-based framework from gender and critical race studies to frame issues of justice and power while accounting for its manifestation across multiple scales of energy and climate decisionmaking processes.

An intersectional approach to studying issues of procedural justice in energy and climate change policies begins to address these critical concerns. More broadly, utilizing process-focused intersectional methodologies for studying energy and climate issues provides the tools for examining and critically analyzing the underlying social factors that create and reproduce inequity and injustice across multiple socio-political scales. The scope of intersectional approaches that could potentially constitute a 'methodological toolkit' of sorts is not limited to the methods I engaged in to conduct a multi-sited critical policy ethnography, nor the use of an adapted IBPA. Beyond what I have discussed here, I would encourage future authors to explore the further application of other intersectionally-informed qualitative methods such as life story narratives, everyday life as a point of departure [74], figurations [28], participatory action research [38], and photovoice [84,85] to address issues of power, justice, and equity in energy and climate research.

Sovacool [18] views the social sciences as offering potential sites of resistance, where the voices of the marginalized can be incorporated and privileged, and oppression can be challenged. They note that energy research must shift away from a narrative of "great men and machines" to one of diversity and inclusion which examines "layers of identity, structures, institutions, and representations" (p. 15), and asks questions about who is influential over, who is absent from energy decisionmaking processes, and what actors actively and violently silence the voices of dissenters in energy decisions. As I have suggested, studying the "who" and the "how" of these processes results in a clearer understanding of differential opportunities for participation in and influence over policymaking. These type of concerns manifest also as questions about the "how" of regulation and the space for achieving procedural justice in energy and climate policy decisions.

Across varying scales we must be able to evaluate how contextual, intersecting identities create sets of conditions of privilege and oppression for social actors and institutional players within energy development, energy use, and climate change, and how these generate procedural and distributional equity concerns. Identifying the way environmental inequities are distributed across individuals, organizations, and governments, based on pre-existing arrangements of privilege and oppression will help to eradicate existing inequalities and combat inequality in future energy and climate decisionmaking processes.

Intersectionality works toward the goal of liberating people from multiple forms of oppression, and is thus embedded in critical research which more broadly works to promote social change that eliminates inequality [39]. Critical theorists go beyond interpretivism by suggesting that not only is subjectivity in research unavoidable, but a researcher's politics are also inseparable from their research. As such, research should work to challenge values and norms in a way that can transform the lives of research participants and others for the better [86]. By focusing on power structures, systems, and hierarchies, qualitative intersectional methods can work to transform our energy and climate systems into ones which account for and address inequality and differential needs and capacities. Without approaches such as this, the most vulnerable segments of the world's population will continue to be most severely impacted by the current state of our energy system and the coming changes to our climate.

Appendix A. Intersectionally-Informed Interview Guide Questions adapted from Hankivsky et al. [35]

1. What knowledge, values, and experiences do you bring to policy development related to oil and gas? 2. What are the main issues related to policy development for regulating oil and gas development? a. What are your primary concerns, or what are the primary concerns that you hear from residents/constituents? b. How have these issues been represented by different stakeholders? 3. How are different groups of people impacted by these issues? a. What inequalities exist in the process of developing regulations for unconventional oil and gas development? 4. Describe the current policies in place to address the issues you mentioned. 5. Where and how can interventions be made to improve these issues? 6. What spaces exist for different stakeholders to participate in the decisionmaking process? a. What key stakeholders were included in this process? Excluded? b. Where and how can we enhance spaces for different stakeholders to participate? c. What sort of power dynamics do you see across these actors and organizations? 7. What benefits or risks do you feel accompany unconventional oil and gas development? a. How are these distributed across different groups of people? 8. What sort of policies are currently being proposed? How might they reduce inequities in terms of ability to participate in policy development for regulation oil and gas development or minimizing potential risks and impacts of UOGD? 9. A large portion of the legislation moving through the Colorado Congress the last six years has related to the balancing of rights between state and local governments to regulate unconventional oil and gas development. What do you think is the appropriate way their roles should be balanced in decisions related to unconventional oil and gas development, particularly as it relates to land use planning?

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